

R E M A R K S

Careful review and examination of the subject application are noted and appreciated.

The present invention concerns a data controller that may be couplable to a host and coupled to a storage medium, microprocessor, local storage and a buffer memory. The data controller generally comprises a command queuing engine that creates a plurality of threads of sequential commands that exist simultaneously while minimizing interrupts associated to the commands.

CLAIM REJECTIONS UNDER 35 U.S.C. §102

The rejection of claims 21, 22, and 26 under 35 U.S.C. §102(c) as being anticipated by Krakirian '803 is respectfully traversed and should be withdrawn.

Krakirian discloses a system for storing initiator, queue tag, and logical block information, disconnecting from target if command is not auto transfer, reconnecting and performing data transfer (Title). Krakirian does not appear to disclose or suggest every element as arranged in the claims. As such, Krakirian cannot anticipate the claimed invention and the rejection should be withdrawn.

Pending claim 21 provides a data controller that minimizes interrupts to a processor by re-ordering a plurality of

commands received from a host computer. In contrast, page 3, item 5, lines 8-9 of the Office Action states, "However, Krakirian does not explicitly disclose the data controller minimizes interrupts to the processor by the reordering." (Emphasis added) The Office Action concedes that Krakirian does not disclose every element as arranged in claim 21. As such, the present invention is fully patentable over the cited reference and the rejection should be withdrawn.

Pending claim 26 provide a data controller that creates threads (plural) of a plurality of commands. Despite the citations provided in the Office Action, Krakirian does not appear to disclose or suggest the claimed invention. In particular, the Office Action cites column 15, lines 27-29 of Krakirian as disclosing a creation of threads. The cited text of Krakirian reads, "Multiple commands are therefore "queued" in the target provided that no two outstanding commands received from a single initiator have the same queue ID tag." Column 15, lines 27-29 of Krakirian disclose a queue. The cited text and the remaining text of Krakirian appears to be silent regarding the queue holding several threads of commands. One does not anticipate plural, therefore Krakirian does not appear to disclose or suggest creating threads of a plurality of commands as presently claimed.

Furthermore, the pending claim 26 (old claim 4) was already rejected once under 35 U.S.C. §102(e) as being anticipated

by Krakirian in the December 15, 2000 Office Action. The §102(e) rejection over Krakirian was apparently overcome by the February 28, 2001 Amendment to old claim 4 as the subsequent May 16, 2001 Office Action changed the rejection from §102(e) Krakirian to §103(a) Ellis in view of Krakirian. Assuming, arguendo, that Krakirian is good §102(e) prior art (for which Applicants' representative does not necessarily agree), the §102(e) Krakirian should have been maintained in the May 16, 2001 Office Action as the best prior art, but was not. Since the May 16, 2001 Office Action effectively conceded that the claim 4 (now claim 26) was not anticipated by Krakirian, then the pending claim 26 still cannot be anticipated by Krakirian. As such, the present invention is fully patentable over the cited reference and the rejection should be withdrawn.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

The rejection of claim 3 under 35 U.S.C. §103(a) as being unpatentable over Krakirian '803 in view of Jones et al. '641 (hereafter Jones) is respectfully traversed and should be withdrawn.

The rejection of claims 16-20 under 35 U.S.C. §103(a) as being unpatentable over Krakirian '803 in view of Jones '641 and Bean et al. '626 (hereafter Bean) is respectfully traversed and should be withdrawn.

The rejection of claims 23-35 under 35 U.S.C. §103(a) as being unpatentable over Krakirian '803 in view of Bean et al. '626 is respectfully traversed and should be withdrawn.

Krakirian teaches a system for storing initiator, queue tag, and logical block information, disconnecting from target if command is not auto transfer, reconnecting and performing data transfer (Title). Jones teaches a system for scheduling read ahead operations if new request is within a proximity of N last read requests wherein N is dependent on independent activities (Title). Bean teaches an apparatus and method for controlling digital data processing system employing multiple processors (Title).

Claim 3 provides creation of a plurality of threads of sequential commands that exist simultaneously. In contrast, Page 4, item 7, lines 7-8 of the Office Action states, "However, Krakirian **does not explicitly** disclose the plurality of threads of sequential commands exist simultaneously." (Emphasis added) The Office Action cites column 50, lines 50-60 and column 53, lines 1-63 of Jones as teaching creation of a plurality of threads of sequential commands that exist simultaneously. Column 50, lines 50-60 of Jones reads:

Read/Write Combining

When multiple sequential read or write requests exist on the drive queue, DDA will combine those requests into single, large requests to enhance performance. This is especially effective for small writes on guarded arrays. If an error occurs, the requests are decombined and run as ORIGINALs to simplify error handling. In the following example, multiple, sequential disk reads are enqueued.

The composite drive type is unimportant, but the maximum transfer size of the composite disk is 128. (Emphasis added)

Column 50, lines 50-60 of Jones appears to teach combining multiple requests into a single request. Creating a single request does not teach or suggest creating multiple threads of commands as presently claimed.

Column 53, lines 1-63 of Jones provides several snapshots of a queue during a guarded write process. However, column 40, lines 21-23 of Jones reads, "In the following descriptions of fragment operations, snapshots of the request queue for each stage in the process will be provided." Jones teaches a request queue. The cited text and the remaining text of Jones do not appear to teach or suggest that the request queue holds a plurality of threads of sequential commands that exist simultaneously as presently claimed. As such, the claimed invention is fully patentable over the cited references and the rejection should be withdrawn.

Assuming, *arguendo*, that Jones teaches creating a plurality of threads of sequential commands that exist simultaneously (for which Applicant's representative does not necessarily agree), then the Office Action still fails to make a *prima facie* case for obviousness to combine the teachings of Krakirian with Jones. In particular, the Court of Appeals for the Federal Circuit has indicated that the requirement for showing the

teaching of motivation to combine references is "rigorous" (In re Anita Dembiczak and Benson Zinbarg, 50 U.S.P.Q.2d 1614 (Fed. Cir. 1999)). Moreover, this showing, which is rigorously required, must be "clear and particular" (Dembiczak at 1617). It is well established that merely because references can be combined, the mere suitability for logical combination does not provide motivation for the combination (See, Berghauser v. Dann, Comr. Pats., 204 U.S.P.Q. 398 (DCDC 1979); ACS Hospital Systems, Inc. v. Montefiore Hospital, 221 U.S.P.Q. 929 (Fed. Cir. 1984)). Moreover, mere conclusory statements supporting the proposed combination, standing alone are not "evidence" (McElmurry v. Arkansas Power & Light Co., 27 U.S.P.Q.2d 1129, 1131 (Fed. Cir. 1993)). Furthermore, ACS Hospital Systems indicates that an Examiner may not use the patent application as a basis for the motivation to combine or modify the prior art to arrive at the claimed invention.

The Office Action fails to provide clear and particular motivation to combine Krakirian and Jones. Page 5, lines 1-2 of the Office Action argues motivation to "increase flexibility in handling multiple SCSI commands of Krakirian's [col. 15, lines 14-17]." Such a conclusory statement is not clear and particular evidence. Column 15, lines 27-29 of Krakirian already teaches handling of multiple commands through a queue. The Office Action provides no evidence why one of ordinary skill in the art would seek Jones to increase the queuing flexibility already taught by

Krakirian. The Office Action also provides no evidence that the teachings of Jones would in fact increase the queuing flexibility of the Krakirian invention.

Furthermore, the United States patent laws allow improvements to existing inventions to be patented. Therefore, a desire to improve an invention alone is not sufficient motivation to make a combination obvious. As such, the Office Action has failed to make a prima facie case of obviousness to combine Krakirian and Jones and thus the rejection should be withdrawn.

Claims 16-20 depended either directly or indirectly from independent claim 3, which is believed to be allowable. The Office Action does not provide any evidence that Bean fixes the deficiencies of Krakirian and Jones in regards to claim 3 as argued above. As such, the presently pending invention is fully patentable over the cited references and the rejection should be withdrawn.

Furthermore, the Examiner has failed to make a prima facie case of obviousness to combine Krakirian, Jones, and Bean. Page 6, lines 2-3 of the Office Action argues motivation to "increase efficiency of the Krakirian and Jones et al's microprocessor." Such a conclusory statement is not clear and particular evidence. The Office Action provides no evidence of how the teachings of Bean would increase efficiency of the Krakirian or Jones microprocessors. The Office Action provides no evidence of

why an increase in efficiency over that taught by Krakirian would be sought by one of ordinary skill in the art.

Furthermore, the United States patent laws allow improvements to existing inventions to be patented. Therefore, a desire to improve an invention alone is not sufficient motivation to make a combination obvious. As such, the Office Action has failed to make a prima facie case of obviousness to combine Krakirian, Jones, and Bean and thus the rejection should be withdrawn.

Claims 23-25 depended either directly or indirectly from independent claim 21, which is believed to be allowable. The Office Action does not provide any evidence that Bean fixes the deficiencies of Krakirian in regards to claim 21 as argued above. As such, the presently pending invention is fully patentable over the cited references and the rejection should be withdrawn.

Furthermore, the Examiner has failed to make a prima facie case of obviousness to combine Krakirian and Bean. Page 6, item 9, line 10 of the Office Action argues motivation to "increase efficiency of the Krakirian's microprocessor." Such a conclusory statement is not clear and particular evidence. The Office Action provides no evidence of how the teachings of Bean would increase efficiency of the Krakirian microprocessor. The Office Action provides no evidence of why an increase in efficiency over that

taught by Krakirian would be sought by one of ordinary skill in the art.

Furthermore, the United States patent laws allow improvements to existing inventions to be patented. Therefore, a desire to improve an invention alone is not sufficient motivation to make a combination obvious. As such, the Office Action has failed to make a prima facie case of obviousness to combine Krakirian and Bean and thus the rejection should be withdrawn.

AMERICAN INVENTORS PROTECTION ACT OF 1999

Applicants' representative respectfully traverses the assertion in item 4 on page 2 of the Office Action that the American Inventors Protection Act of 1999 (AIPA) does not apply to the examination of the pending application. The pending application is a CPA filed on December 13, 2001. December 13, 2001 is after the November 29, 2000 effective date for the AIPA. As such, the AIPA applies to the present application.

FINALITY OF THE OFFICE ACTION

Applicant's representative respectfully requests reconsideration of the finality of the June 18, 2002 Office Action.

M.P.E.P. §706.07(a) states:

Under present practice, second or any subsequent action on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor

based on information submitted in an information disclosure statement filed during the period set forth in 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p). (Emphasis added)

Furthermore, 37 C.F.R. §1.104(b) states:

(b) *Completeness of examiner's action.* The examiner's action will be complete as to all matters, except that in appropriate circumstances, such as misjoinder of invention, fundamental defects in the application, and the like, the action of the examiner may be limited to such matters of form need not be raised by the examiner until a claim is found allowable. (Emphasis added)

The Office Action provides new grounds of rejection that were neither necessitated by amendment of the claims nor based on an information disclosure statement. The new grounds of rejection should have been made in earlier Office Action, but were not. As such, the final rejections are premature and should be withdrawn.

Pending claims 21, 22, and 26 are the same as earlier claims 2, 12, and 4, respectively. Claims 2, 12, and 4 were cancelled by the November 16, 2001 Amendment After Final (claims 2 and 12) and the May 16, 2001 Amendment (claim 4) in the interest of furthering prosecution then reintroduced as claims 21, 22, and 26 in the March 15, 2002 amendment after filing a CPA. Therefore, the rejection of claims 21(2), 22(12), and 26(4) under 35 U.S.C. §102(e) as being anticipated by Krakirian should have been made in the September 24, 2001 Office Action for claims 2 and 12 and the May 16, 2001 Office Action for claim 4, but was not. Krakirian was known to the Examiner at the times that the May 16, 2001 and the

September 24, 2001 Office Actions were written. Therefore, the first occurrence of the 35 U.S.C. §102(e) rejection of claims 21, 22 and 26 as being anticipated by Krakirian should not be a final rejection.

Pending claim 3 has not been amended since the February 8, 2002 Office Action. Therefore, the rejection of claim 3 under 35 U.S.C. §103(a) as being unpatentable over Krakirian in view of Jones should have been made during the February 8, 2002 Office Action, but was not. Both Krakirian and Jones were known to the Examiner at the time the February 8, 2002 Office Action was written. Therefore, the first occurrence of the 35 U.S.C. §103(a) rejection of claim 3 as obvious over Krakirian in view of Jones should not be a final rejection.

Pending claims 16-20 have never been amended. Therefore, the rejection of claims 16-20 under 35 U.S.C. §103(a) as being unpatentable over Krakirian in view of Jones and Bean should have been made before or in the February 8, 2002 Office Action, but was not. The Krakirian, Jones, and Bean references were known to the Examiner at the time the February 8, 2002 Office Action was written. Therefore, the first occurrence of the 35 U.S.C. §103(a) rejection of claims 16-20 as being unpatentable over Krakirian in view of Jones and Bean should not be a final rejection.

Pending claims 23-25 are the same as claims 13-15, respectively. Claims 13-15 were cancelled by the November 16, 2001

Amendment After Final in the interest of furthering prosecution then reintroduced as claims 23-25 in the March 15, 2002 amendment after filing the CPA. Therefore, the rejection of claims 23(13), 24(14), and 25(15) under 35 U.S.C. §103(a) as being unpatentable over Krakirian in view of Bean should have been made in the September 24, 2001 Office Action, but was not. Krakirian and Bean were known to the Examiner at the times that the May 16, 2001 and the September 24, 2001 Office Actions were written. Therefore, the first occurrence of the 35 U.S.C. §103(a) rejection of claims 23-25 as being unpatentable over Krakirian in view of Bean should not be a final rejection.

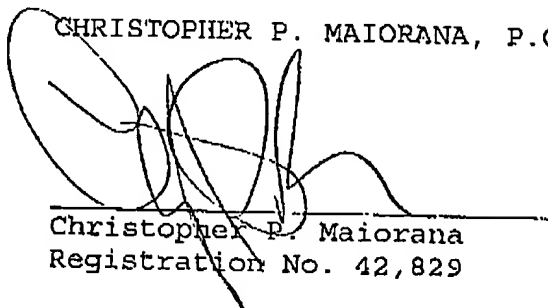
Accordingly, the present application is in condition for allowance. Early and favorable action by the Examiner is respectfully solicited.

The Examiner is respectfully invited to call the Applicants' representative at 586-498-0670 should it be deemed beneficial to further advance prosecution of the application.

If any additional fees are due, please charge our office
Account No. 12-2252.

Respectfully submitted,

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